

dried specimens, quite unlike that of any other species known from Mexico and Central America.

Philodendron escuintlensis sp. nov. Planta epiphitica scandens, caule ut videtur crasso 2-3 cm. diam.; petiolo 25-42 cm. longo usque $\frac{2}{3}$ longitudinis vaginato; lamina chartacea oblongo-cordata 25-28 cm. longa, 18 cm. lata; nervis primariis utroque circa 14 pallidis elevatis; pedunculo 10/12 cm. longo vel longiore gracili; spatha ochroleuca 20 cm. longa, ad apicem cuspidata, 7-8 cm. lata; spadice sessili 15 cm. longo 1-1.2 cm. diam. cylindrico, e basi $\frac{1}{3}$ longitudinis pistillato et $\frac{2}{3}$ staminato (fig. 1d).

Mexico. Chiapas: in wet forest of Salto de Agua, 16 km. northeast of Escuintla, at 500 m. altitude, 30 August 1947, *Matuda 17783* (type, Matuda Herbarium; isotypes, Instituto de Biologia de Mexico, and Chicago Natural History Museum); Jilguero, 20 km. east of Escuintla, in advanced forest at 350 m. altitude, *Matuda 17784*.

Only the upper half of the spathe opens when the floral organs are mature, and it closes completely when pollination has been accomplished and remains closed until the fruit is ripe. On the inner parts of the spathe are found many thin, dark, red lines extending in a vertical direction. When the flowers are mature, dark, red, mucous sticky sap exudes from these lines as in the case of *P. calderense* and *P. linearipetiolum*, described above. The adventitious roots produce very fine *mimbre*. In the genus there are many related species similar in leaf-form, but the long petioles and thinner leaves readily distinguish our species.

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Matuda Herbarium,
Escuintla, Chiapas, Mexico.

THE CHASE OAK, A NEW GIANT HYBRID OAK FROM SANTA CLARA COUNTY, CALIFORNIA

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In December of 1947 a letter from Harold S. Chase of Santa Barbara, California to H. E. McMinn of Mills College contained information about an unusually large tree (fig. 1) which had been identified as \times *Quercus Morehus* Kell., oracle oak, a hybrid between *Q. Wislizenii* A. DC. and *Q. Kelloggii* Newb. This tree is growing on the Castro Valley Ranch about six miles southwest of Gilroy, California. Since all known specimens of the oracle oak are small trees rarely more than 40 feet high and with a spread of not more than 30 feet, this tree aroused immediate interest.

An invitation by Mr. and Mrs. Chase was extended to the authors to visit the ranch in January, 1948. Some doubt that the giant oak was \times *Quercus Morehus* was expressed at that time, but because the tree was associated with a mixture of deciduous, semi-evergreen, and evergreen oaks, further study was postponed until May when the trees were in full leaf. The following measure-



FIG. 1. The Chase oak. \times *Quercus Chasei*. About sixty percent evergreen during the winter. Photograph by Dr. Noble H. Logan.

ments were made on this second trip: height 75 feet, widest spread 111 feet, spread at right angles to widest spread 108 feet, circumference of trunk at $3\frac{1}{2}$ feet from ground 17 feet and 4 inches, distance of first branch from ground 4 feet and 4 inches, circumference of first branch 6 feet and 4 inches, spread of first limb 54 feet, diameter of largest healed limb-scar 23 inches.

Within a radius of about 100 yards from the giant oak oc-

curred 106 specimens of *Quercus agrifolia* Née (coast live oak), 17 specimens of *Quercus lobata* Née (valley oak), 6 specimens of *Quercus Kelloggii* Newb. (California black oak), 1 specimen of *Quercus durata* Jepson (leather oak), 3 much smaller specimens similar to the giant oak, and 19 specimens of apparent backcrosses which displayed, in various combinations, characteristics of *Quercus agrifolia*, *Q. Kelloggii*, and the giant oak. These 19 progeny were scored on the basis of characters (habit of branching, density and color of foliage, and the size, shape, texture, margins, and surface of leaves) which they had in common with each putative parent. The total score for either parent was 10. The results of this population analysis appear in Table I. The hybrid specimens were either evergreen or partially evergreen; none were wholly deciduous.

TABLE I. ANALYSIS OF QUERCUS POPULATION

Backcrosses	Cumulative Characters Scale 1 - 10	Number of Specimens
{ <i>Q. Kelloggii</i>	4 }	1
{ × <i>Q. Chasei</i>	6 }	
{ <i>Q. agrifolia</i>	5 }	4
{ × <i>Q. Chasei</i>	5 }	
{ <i>Q. agrifolia</i>	6 }	1
{ × <i>Q. Chasei</i>	4 }	
{ <i>Q. agrifolia</i>	7 }	7
{ × <i>Q. Chasei</i>	3 }	
{ <i>Q. agrifolia</i>	8 }	6
{ × <i>Q. Chasei</i>	2 }	
		Total 19

The three smaller specimens resembling the giant oak and the 19 specimens of hybrid oaks were on the down hill and leeward side of the large oak specimen, and they most likely represent some of its progeny. Since the giant oak has characteristics of both *Quercus agrifolia* and *Q. Kelloggii*, and since both of these species occur together in the area, and inasmuch as the hybrids in the area have a mixture of characters of *Quercus agrifolia*, *Q. Kelloggii*, and the giant oak, we are of the opinion that this large oak has resulted from a cross between *Quercus agrifolia*, the evergreen leaved parent, and *Q. Kelloggii*, the deciduous leaved parent, and that it is not the oracle oak, × *Quercus Morehus* Kell.

A review of the literature on hybrid oaks did not reveal any published record of a cross between these two species. However, Carl B. Wolf (Proc. Calif. Acad. Sci. Ser. 4, Vol. 25, No. 5, 177-188. 1944) described the Gander oak as a new hybrid between *Quercus Kelloggii* Newb. and *Quercus agrifolia* var. *oxyadenio*

(Torr.) J. T. Howell. In discussing this hybrid, Wolf stated that he had received from Mr. John M. Tucker an oak specimen collected in the Santa Lucia Mountains of Monterey County, "that appears to be a hybrid between *Quercus Kelloggii* and *Quercus agrifolia*, but we have not been able to visit the area and see the tree growing in the wild, nor has it been possible to obtain acorns for propagation. . . . If it should be demonstrated that it is a hybrid, as suggested above, it could hardly be included in the present concept of \times *Quercus Ganderi* unless that concept be enlarged and *Quercus agrifolia* var. *oxyadenia* be reduced to synonymy under *Quercus agrifolia*."

This hybrid differs from the Gander oak (\times *Quercus Ganderi* C. B. Wolf) in developing its acorns during the second year and in its typically larger leaves. It differs from the oracle oak (\times *Quercus Morehus* Kell.) in having the axillary tufts of stellate hairs characteristic of its evergreen parent, *Quercus agrifolia* Née.

It would appear then that this new hybrid oak should be named and we hereby propose the name \times *Quercus Chasei* McMinn, Babcock and Righter, Chase oak. It is a pleasure to name this oak in honor of Mr. Harold S. Chase, upon whose ranch it grows and who called it to our attention. Mr. Chase is demonstrating on his ranch some of the most modern and practical ideas of range and forest conservation to be found in our western states.

\times *Quercus Chasei* McMinn, Babcock, and Righter hybr. nov. Chase oak. (*Quercus agrifolia* Née \times *Quercus Kelloggii* Newb.). Arbor magna, corona ampla rotunda. Cortex laevis vel scaber fuscus vel fuscus. Folia semi-sempervirentia, 5–14 cm. longa, 2.5–10 cm. lata, superne atrovirentia glabra, subter pallida et glabra praeter floccos pilorum axillares; laminis prope planis valde coriaceis irregulariter et insule lobatis; petiolis 9–25 mm. longis primo dense stellato-pubescentibus tandem glabrescentibus. Inflorescentia pariens in ramulis vernalibus. Balani plerumque solitarii vel interdum 2–4 in corymbis, maturescentes in anno secundo. Plerusque intermedia inter parentes putatives. A \times *Q. Ganderi* differt in balanis maturescentis in anno secundo; a \times *Q. Morehus* in floccis pilorum axillaribus.

Tree up to 75 feet high, with a spread up to 111 feet and a trunk diameter up to 5½ feet, forming a broad, rounded crown. Bark smooth to rough and checkered, grayish to dark brown, young branchlets nearly black, densely stellate-pubescent, becoming lighter and nearly glabrous in age. Leaves about 50 to 60 percent evergreen; petioles ¾ inch to 1 inch long, at first densely stellate-pubescent, becoming nearly glabrous; the blades flat to slightly concavo-convex, thick and leathery, rectangular-oval to broadly elliptical in outline, 2 to 5½ inches long, 1 to 4 inches broad, dark green and essentially glabrous above, light dull green and apparently nearly glabrous beneath except for axillary

tufts and few scattered compound hairs, margins shallowly and irregularly lobed, rarely cut more than one-third way to midrib, the lobes with 1 or 2 fine bristles $\frac{1}{8}$ to $\frac{1}{4}$ inch long. Staminate and pistillate flowers borne on new spring branchlets. Acorns maturing the second year, solitary or in clusters of 2 to 4; the cup $\frac{1}{4}$ to $\frac{3}{8}$ inch high, $\frac{5}{8}$ to $\frac{3}{4}$ inch broad, scales thin, well imbricated; the nut ovoid, about one-third enclosed by cup, $\frac{5}{8}$ to $\frac{7}{8}$ inch long, finely pubescent without, densely pubescent within.

Type. Castro Valley Ranch about six miles southwest of Gilroy, Santa Clara County, California, October 2, 1948, *McMinn, Babcock*, and *Righter 5561* (Herbarium of the University of California No. 766681). A topotype, showing young acorns, was collected May 8, 1948 (*McMinn, Babcock*, and *Righter 5560*).

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MYXOMYCETES OF MOUNT SHASTA

WILLIAM BRIDGE COOKE

Myxomycetes have been collected on Mount Shasta, Siskiyou County, California, during seven summers between 1937 and 1947. No earlier records of these plants from this mountain are known to the writer. Intensive collecting was carried on during the early parts of the summer seasons as the plant materials upon which myxomycetes fruit were becoming exposed by the melting snow pack and during the times when dead and rotten logs of Shasta fir, *Abies magnifica* var. *shastensis*, were still wet. Less intensive collecting was carried on during the remaining months of the summer when most substrata upon which these organisms fruit were very dry. Most of the collections were made in the Shasta fir and white bark pine zones in the vicinity of the Sierra Club's Shasta Alpine Lodge located at Horse Camp which is situated in the ecotone between these two zones.

All the specimens collected were determined by G. W. Martin, of the State University of Iowa, who found among them two previously unknown species. Arrangement of genera in the following table is that found in "The Myxomycetes" by T. H. Macbride and G. W. Martin (MacMillan Company, New York, 1934).

Two species of lichens, a species of *Coniocybe* and material referred by Dr. Martin to *Mycocalicium albonigrum* (Nyl.) Fink